WHAT IS CLAIMED IS:

1. A method of making pieces for a magnetic resonance imaging magnet comprising the steps of:

(a) providing a mold wherein a plurality of elongated ferromagnetic rods extending side-by-side in a lengthwise direction are placed;

(b) introducing a dielectric material between said ferromagnetic rods thereby producing a shim piece with a thickness direction corresponding to the lengthwise direction of said ferromagnetic rods.

2. A method as claimed in claim 1 further comprising the step of assembling a plurality of said shim pieces with a magnet pole to form a shim on said pole.

3. A method as claimed in claim 2 wherein said assembling step is performed so as to form a shim in the form of a substantially closed shim ring.

4. A method as claimed in claim 1 wherein said mold produces said shim piece in a generally arcuate shape.

5. A method as claimed in claim 1 further comprising the step of trimming said shim piece forming a general arcuate form.

6. A method as claimed in claim 1 wherein said mold has a depth corresponding to the thickness of said shim piece.

7. A method of making pieces for a magnetic resonance imaging magnet comprising the steps of:

(a) providing an intermediate element including a plurality of elongated ferromagnetic rods extending side-by-side in a lengthwise direction with a dielectric material therebetween; and

(b) slicing said intermediate element transverse to said lengthwise direction to form a plurality of shim pieces each having a thickness direction corresponding to the lengthwise direction of said rods in said intermediate element.

8. A method as claimed in claim 7 further comprising the step of assembling a plurality of said shim pieces with a magnet pole to form a shim on said pole.

9. A method as claimed in claim 8 wherein said assembling step is performed so as to form a shim in the form of a substantially closed shim ring.

10. A method as claimed in claim 8 wherein said shim pieces are assembled with gaps between said shim pieces forming said substantially closed shim ring.

11. A method as claimed in claim 8 wherein said intermediate element has a generally arcuate shape in section transverse to said longitudinal direction of said rods, whereby said shim pieces are generally arcuate.

12. A method as claimed in claim 8 wherein said shim pieces all have substantially equal thickness.

13. A method as claimed in claim 7 wherein said step of slicing said intermediate element includes cutting through the intermediate element with a saw.

14. A method as claimed in claim 7 further comprising the step of trimming said shim pieces to alter the profiles of said shim pieces in a plane transverse to the thickness of said shim pieces after said slicing step forming a general arcuate form.

15. A method as claimed in claim 14 wherein said trimming step includes cutting through the shim pieces with an abrasive jet.

16. A method as claimed in claim 14 wherein said trimming step includes using a milling machine.

17. A method as claimed in claim 7 wherein said step of providing an intermediate element includes cleaning said rods of any oily residue and other contaminants.

18. A method as claimed in claim 7 wherein said step of providing an intermediate element including roughening said rods and removing oxides, dirt and any other contaminants from surfaces of said rods.

19. A method as claimed in claim 7 wherein said step of providing an intermediate element including covering said rod with a dielectric sleeve.

20. A method as claimed in claim 7 wherein said step of providing an intermediate element includes placing said rods in a mold and curing said dielectric around said rods in said mold.

21. A method as claimed in claim 20 wherein said dielectric includes an epoxy.

22. A method as claimed in claim 20 wherein said dielectric is placed between a dielectric sleeve and said rod.

23. A method as claimed in claim 20 wherein said dielectric sleeve is a fiberglass sleeve.

24. A method as claimed in claim 7 wherein said rods are substantially hexagonal in cross-sectional shape.

25. A shim piece for use in forming a shim on a magnet comprising a plurality of ferromagnetic elements with a dielectric therebetween, said shim piece having a thickness direction and a generally arcuate shape in a plane transverse to said thickness direction such that each shim piece has two ends spaced apart from one another.

26. A shim piece as claimed in claim 25 wherein said ferromagnetic elements include ferromagnetic rod sections having axes, said rod sections being disposed substantially side-by-side with said axes extending in said thickness direction.

27. A shim piece as claimed in claim 26 wherein said rod sections are substantially hexagonal in cross-sectional shape.

28. A shim piece as claimed in claim 26 wherein said rod is encased in a dielectric sleeve.

29. A magnet including a ferromagnetic structure defining a first pole having a pole axis, a plurality of shim pieces as claimed in claim 25, at least some of the shim pieces being attached to said first pole, the thickness directions of said shim pieces on said first pole being generally co-directional with said pole axis, said shim pieces attached to said first pole being arranged generally end-to-end so that such shim pieces define a first shim ring extending around the pole axis.

30. A magnet as claimed in claim 29 wherein said ferromagnetic structure defines a second pole spaced apart from said first pole on said pole axis, and wherein said shim pieces include shim pieces attached to said second pole, the thickness directions of said shim pieces on said second pole being generally co-directional with said pole axis, said shim pieces attached to said second pole being arranged generally end-to-end so that such shim pieces define a second shim ring extending around the pole axis.

31. A magnet as claimed in claim 30 wherein said first and second shim rings are of substantially equal diameter and both are concentric with the pole axis.

32. A magnet as claimed in claim 30 further comprising means for limiting eddy currents in said poles.